## CLAIMS

## 1. A compound represented by the formula

wherein A represents (1) a bond, (2) a group represented by the formula  $-CR^a=CR^b-$  ( $R^a$  and  $R^b$  each represent a hydrogen atom or a  $C_{1-6}$  alkyl group), (3) a group represented by the formula - (CONH) $_p-$ (C( $R^c$ )( $R^d$ )) $_q-$ ( $R^c$  and  $R^d$  each represent a hydrogen atom or a  $C_{1-6}$  alkyl group, p represents 0 or 1 and q represents 1 or 2), (4) a group represented by the formula  $-CH_2OCH_2-$  or (5) a group represented by the formula  $-OCH_2-$ ;

R<sup>1</sup> represents (1) a cyano group or (2) an optionally esterified or amidated carboxyl group;

R<sup>2</sup> represents (1) a hydrogen atom, (2) an optionally substituted hydroxy group, (3) an optionally substituted amino group, (4) an optionally substituted alkyl group, (5) an optionally esterified or amidated carboxyl group or (6) a nitro group, or R<sup>2</sup> and A or R<sup>1</sup> may be taken together with the adjacent carbon atom to form a ring;

R<sup>3</sup> and R<sup>4</sup> each represent (1) a hydrogen atom, (2) an
20 optionally substituted hydrocarbon group or (3) an acyl group, or
R<sup>3</sup> and R<sup>4</sup> may be taken together with the adjacent carbon atom to
form an optionally substituted 3- to 8-membered ring;

R<sup>5</sup> represents (1) a hydrogen atom, (2) a cyano group, (3) an optionally substituted hydrocarbon group, (4) an acyl group or (5) an optionally substituted hydroxy group;

 $R^6$  represents (1) a hydrogen atom, (2) an optionally substituted hydrocarbon group, (3) an acyl group, (4) an

optionally substituted heterocyclic group, (5) a halogen atom, (6) an optionally substituted hydroxy group, (7) an optionally substituted thiol group, (8) a group represented by the formula - S(O)<sub>r</sub>R<sup>11</sup> (R<sup>11</sup> represents an optionally substituted hydrocarbon group or an optionally substituted heterocyclic group and r is 1 or 2) or (9) an optionally substituted amino group;

R<sup>7</sup> and R<sup>8</sup> each represent (1) a hydrogen atom or (2) an optionally substituted hydrocarbon group, or R<sup>7</sup> and R<sup>8</sup> may be taken together with the adjacent carbon atom to form an optionally substituted 3- to 8-membered ring;

 $R^9$  and  $R^{10}$  each represent (1) a hydrogen atom or (2) an optionally substituted hydrocarbon group;

Y represents an optionally substituted methylene group; and n represents 0 or 1,

provided that if A is a bond,  $R^2$  is not a hydrogen atom, and if A is a group represented by the formula  $-(CONH)_p-(C(R^c)(R^d))_q-(R^c)$  and  $R^d$  each represent a hydrogen atom or a  $C_{1-6}$  alkyl group, p represents 0 or 1 and q represents 1 or 2),  $R^6$  is not methoxy, or a salt thereof.

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The compound according to claim 1, wherein R¹ is (i) a cyano group, (ii) a carboxyl group, (iii) a C₁-6 alkoxy-carbonyl group which may have 1 to 5 substituents selected from a group consisting of (1) a halogen atom, (2) a C₁-3 alkylenedioxy group,
 (3) a nitro group, (4) a cyano group, (5) an optionally halogenated C₁-6 alkyl group, (6) an optionally halogenated C₂-6 alkenyl group, (7) an optionally halogenated C₂-6 alkynyl group, (8) a C₃-8 cycloalkyl group, (9) a C₆-14 aryl group, (10) an optionally halogenated C₁-6 alkoxy group, (11) an optionally halogenated C₁-6 alkylthio group, (12) a hydroxy group, (13) an amino group, (14) a mono-C₁-6 alkylamino group, (15) a mono-C₆-14 arylamino group, (16) a di-C₁-6 alkylamino group, (17) a di-C₆-14 arylamino group, (18) an acyl group selected from formyl, carboxyl, carbamoyl, C₁-6 alkyl-carbonyl, C₃-8 cycloalkyl-carbonyl, C₁-6
 alkoxy-carbonyl, C₆-14 aryl-carbonyl, C₁-16 aralkyl-carbonyl, C₆-14

aryloxy-carbonyl, C7-16 aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono-C<sub>1-6</sub> alkyl-carbamoyl, di-C<sub>1-6</sub> alkyl-carbamoyl, 5 mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, C<sub>1-6</sub> alkyl-thiocarbonyl, C<sub>3-8</sub> cycloalkylthiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$ 10 aralkyl-thiocarbonyl, C<sub>6-14</sub> aryloxy-thiocarbonyl, C<sub>7-16</sub> aralkyloxythiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, di- $C_{1-6}$  alkyl-15 thiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  arylthiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl,  $di-C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$ 20 arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$ alkylsulfinyl, C<sub>6-14</sub> arylsulfinyl, sulfino, sulfo, C<sub>1-6</sub> alkoxysulfinyl,  $C_{6-14}$  aryloxysulfinyl,  $C_{1-6}$  alkoxysulfonyl and  $C_{6-14}$ aryloxysulfonyl, (19) an acylamino group selected from formylamino,  $C_{1-6}$  alkyl-carboxamide,  $C_{6-14}$  aryl-carboxamide,  $C_{1-6}$  alkoxy-25 carboxamide,  $C_{1-6}$  alkylsulfonylamino and  $C_{6-14}$  arylsulfonylamino, (20) an acyloxy group selected from  $C_{1-6}$  alkyl-carbonyloxy,  $C_{6-14}$ aryl-carbonyloxy,  $C_{1-6}$  alkoxy-carbonyloxy,  $mono-C_{1-6}$  alkylcarbamoyloxy,  $di-C_{1-6}$  alkyl-carbamoyloxy,  $mono-C_{6-14}$  arylcarbamoyloxy, di-C<sub>6-14</sub> aryl-carbamoyloxy and nicotinoyloxy, (21) a 30 5- to 14-membered heterocyclic group containing 1 to 4 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, (22) a phosphono group, (23) a  $C_{6-14}$  aryloxy group, (24) a di- $C_{1-6}$  alkoxy-phosphoryl group, (25) a  $C_{6-14}$  arylthio group, (26) a hydrazino group, (27) an imino group, 35 (28) an oxo group, (29) an ureido group, (30) a  $C_{1-6}$  alkyl-ureido

group, (31) a  $di-C_{1-6}$  alkyl-ureido group, (32) an oxide group and (33) a group formed by binding of 2 or 3 groups selected from (1) to (32) listed above and the like (hereinafter, abbreviated as Substituent group A), (iv) a C<sub>3-8</sub> cycloalkyloxy-carbonyl group 5 which may have 1 to 5 substituents selected from Substituent group A described above, (v) a  $C_{7-16}$  aralkyloxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described above, (vi) a C<sub>6-14</sub> aryloxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described 10 above, (vii) a carbamoyl group, (viii) a  $mono-C_{1-6}$  alkyl-carbamoyl group which may have 1 to 5 substituents selected from Substituent group A described above, (ix) a  $di-C_{1-6}$  alkyl-carbamoyl group which may have 1 to 5 substituents selected from Substituent group A described above, (x) a mono- $C_{6-14}$  aryl-carbamoyl group which may 15 have 1 to 5 substituents selected from Substituent group A described above or (xi) a di-C6-14 aryl-carbamoyl group which may have 1 to 5 substituents selected from Substituent group A described above.

R<sup>2</sup> is (i) a hydrogen atom, (ii) a group represented by the 20 formula  $-OR^{12}$  ( $R^{12}$  represents (a) a hydrogen atom, (b) a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, or (c) an acyl group selected from formyl, 25 carbamoyl,  $C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$ alkoxy-carbonyl, C<sub>6-14</sub> aryl-carbonyl, C<sub>7-16</sub> aralkyl-carbonyl, C<sub>6-14</sub> aryloxy-carbonyl, C<sub>7-16</sub> aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to 30 carbon atoms, mono-C<sub>1-6</sub> alkyl-carbamoyl, di-C<sub>1-6</sub> alkyl-carbamoyl, mono-C<sub>6-14</sub> aryl-carbamoyl, di-C<sub>6-14</sub> aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl-35 thiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$ 

aralkyl-thiocarbonyl, C<sub>6-14</sub> aryloxy-thiocarbonyl, C<sub>7-16</sub> aralkyloxythiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, 5 thiocarbamoyl, mono-C<sub>1-6</sub> alkyl-thiocarbamoyl, di-C<sub>1-6</sub> alkylthiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  arylthiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, 10 sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$ arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$ alkylsulfinyl,  $C_{6-14}$  arylsulfinyl,  $C_{1-6}$  alkoxysulfinyl,  $C_{6-14}$ aryloxysulfinyl,  $C_{1-6}$  alkoxysulfonyl and  $C_{6-14}$  aryloxysulfonyl, which may have 1 to 5 substituents selected from Substituent group 15 A described above), (iii) a group represented by the formula - $NR^{13}R^{14}$  ( $R^{13}$  and  $R^{14}$  are each (i') a hydrogen atom, (ii') a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent 20 group A described above, (iii') an acyl group selected from formyl, carbamoyl,  $C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$ alkoxy-carbonyl, C<sub>6-14</sub> aryl-carbonyl, C<sub>7-16</sub> aralkyl-carbonyl, C<sub>6-14</sub> aryloxy-carbonyl, C<sub>7-16</sub> aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from 25 a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono- $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl,  $mono-C_{6-14}$  aryl-carbamoyl,  $di-C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition 30 to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkylthiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$ aralkyl-thiocarbonyl, C<sub>6-14</sub> aryloxy-thiocarbonyl, C<sub>7-16</sub> aralkyloxythiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a 35 sulfur atom and an oxygen atom in addition to carbon atoms,

thiocarbamoyl, mono-C<sub>1-6</sub> alkyl-thiocarbamoyl, di-C<sub>1-6</sub> alkylthiocarbamoyl, mono-C<sub>6-14</sub> aryl-thiocarbamoyl, di-C<sub>6-14</sub> arylthiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a 5 sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl,  $di-C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$ arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$ alkylsulfinyl,  $C_{6-14}$  arylsulfinyl,  $C_{1-6}$  alkoxysulfinyl,  $C_{6-14}$ aryloxysulfinyl, C<sub>1-6</sub> alkoxysulfonyl and C<sub>6-14</sub> aryloxysulfonyl, 10 which may have 1 to 5 substituents selected from Substituent group A described above or (iv') a 5- to 14-membered heterocycle containing 1 to 4 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A 15 described above, or R<sup>13</sup> and R<sup>14</sup> may be taken together with the adjacent a nitrogen atom to form a 5- to 14-membered ring), (iv) a C<sub>1-6</sub> alkylideneamino group which may have 1 to 5 substituents selected from Substituent group A described above, (v) a  $C_{1-6}$  alkyl group which may have 1 to 5 substituents selected from Substituent 20 group A described above, (vi) a carboxyl group, (vii) a C<sub>1-6</sub> alkoxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described above, (viii) a C<sub>3-8</sub> cycloalkyloxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described above, (ix) a C<sub>7-16</sub> 25 aralkyloxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described above, (x) a C<sub>6-14</sub> aryloxy-carbonyl group which may have 1 to 5 substituents selected from Substituent group A described above, (xi) a carbamoyl group, (xii) a mono-C<sub>1-6</sub> alkyl-carbamoyl group which may have 1 to 5 30 substituents selected from Substituent group A described above, (xiii) a di-C<sub>1-6</sub> alkyl-carbamoyl group which may have 1 to 5 substituents selected from Substituent group A described above, (xiv) a mono-C<sub>6-14</sub> aryl-carbamoyl group which may have 1 to 5 substituents selected from Substituent group A described above, 35 (xv) a  $di-C_{6-14}$  aryl-carbamoyl group which may have 1 to 5

substituents selected from Substituent group A described above or (xvi) a nitro group, or R<sup>2</sup> and A or R<sup>1</sup> may be taken together to form a 5- to 14-membered ring containing 1 to 4 hetero atoms selected from a nitrogen atom and an oxygen atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A described above;

each of  $R^3$  and  $R^4$  is any of the following (i) to (iii):

- (i) a hydrogen atom,
- (ii) a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above,
- (iii) an acyl group selected from formyl, carboxyl, carbamoyl,
  C1-6 alkyl-carbonyl, C3-8 cycloalkyl-carbonyl, C1-6 alkoxy-carbonyl,
  15 C6-14 aryl-carbonyl, C7-16 aralkyl-carbonyl, C6-14 aryloxy-carbonyl,
  C7-16 aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl
  containing 1 to 3 hetero atoms selected from a nitrogen atom, a
  sulfur atom and an oxygen atom in addition to carbon atoms, monoC1-6 alkyl-carbamoyl, di-C1-6 alkyl-carbamoyl, mono-C6-14 aryl20 carbamoyl, di-C6-14 aryl-carbamoyl, 5- or 6-membered heterocyclic
  carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen
  atom, a sulfur atom and an oxygen atom in addition to carbon atoms,
  C1-6 alkyl-thiocarbonyl, C3-8 cycloalkyl-thiocarbonyl, C1-6 alkoxythiocarbonyl, C6-14 aryl-thiocarbonyl, C7-16 aralkyl-thiocarbonyl,
- $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, mono- $C_{6-14}$  aryl-
- thiocarbamoyl,  $di-C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl,  $di-C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$
- 35 arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl, sulfino, sulfo,

 $C_{1-6}$  alkoxysulfinyl,  $C_{6-14}$  aryloxysulfinyl,  $C_{1-6}$  alkoxysulfonyl and  $C_{6-14}$  aryloxysulfonyl, which may have 1 to 5 substituents selected from Substituent group A described above; or

 $R^3$  and  $R^4$  may be taken together with the adjacent carbon atom to form  $C_{3-8}$  cycloalkane or a 3- to 8-membered heterocycle, which may have respectively 1 to 3 substituents selected from  $C_{1-6}$  alkyl,  $C_{6-14}$  aryl,  $C_{7-16}$  aralkyl, amino, mono- $C_{1-6}$  alkylamino, mono- $C_{6-14}$  arylamino, di- $C_{1-6}$  alkylamino, di- $C_{6-14}$  arylamino and a 4- to 10-membered aromatic heterocyclic group,

 $R^5$  is (i) a hydrogen atom, (ii) a cyano group, (iii) a  $C_{1-6}$ 10 alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, (iv) an acyl group selected 15 from formyl, carboxyl, carbamoyl,  $C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$ cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,  $C_{6-14}$  aryl-carbonyl,  $C_{7-16}$ aralkyl-carbonyl, C<sub>6-14</sub> aryloxy-carbonyl, C<sub>7-16</sub> aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen 20 atom in addition to carbon atoms, mono- $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$ alkyl-carbamoyl, mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$ 25 cycloalkyl-thiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  arylthiocarbonyl, C<sub>7-16</sub> aralkyl-thiocarbonyl, C<sub>6-14</sub> aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to 30 carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, di- $C_{1-6}$ alkyl-thiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  arylthiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, 35 sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$ 

arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$ alkylsulfinyl,  $C_{6-14}$  arylsulfinyl, sulfino, sulfo,  $C_{1-6}$ alkoxysulfinyl,  $C_{6\text{--}14}$  aryloxysulfinyl,  $C_{1\text{--}6}$  alkoxysulfonyl and  $C_{6\text{--}14}$ aryloxysulfonyl, which may have 1 to 5 substituents selected from 5 Substituent group A described above, or (v) a group represented by the formula  $-OR^{15}$  ( $R^{15}$  represents (a) a hydrogen atom, (b) a  $C_{1-6}$ alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from 10 Substituent group A described above, or (c) an acyl group selected from formyl, carbamoyl,  $C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$  cycloalkylcarbonyl,  $C_{1-6}$  alkoxy-carbonyl,  $C_{6-14}$  aryl-carbonyl,  $C_{7-16}$  aralkylcarbonyl,  $C_{6-14}$  aryloxy-carbonyl,  $C_{7-16}$  aralkyloxy-carbonyl, 5- or 6membered heterocyclic carbonyl containing 1 to 3 hetero atoms 15 selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono- $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkylcarbamoyl, mono- $C_{6-14}$  aryl-carbamoyl, di- $C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in 20 addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkylthiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$ aralkyl-thiocarbonyl, C<sub>6-14</sub> aryloxy-thiocarbonyl, C<sub>7-16</sub> aralkyloxythiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a 25 sulfur atom and an oxygen atom in addition to carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, di- $C_{1-6}$  alkylthiocarbamoyl, mono- $C_{6-14}$  aryl-thiocarbamoyl, di- $C_{6-14}$  arylthiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a 30 sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$  alkylsulfamoyl,  $C_{6-14}$ arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$  arylsulfonyl,  $C_{1-6}$ alkylsulfinyl,  $C_{6-14}$  arylsulfinyl,  $C_{1-6}$  alkoxysulfinyl,  $C_{6-14}$ aryloxysulfinyl,  $C_{1-6}$  alkoxysulfonyl and  $C_{6-14}$  aryloxysulfonyl, 35 which may have 1 to 5 substituents selected from Substituent group

A described above),

 $R^6$  is any of the following (i) to (x):

- (i) a hydrogen atom,
- (ii) a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above,
- (iii) an acyl group selected from formyl, carboxyl, carbamoyl, C<sub>1-6</sub> alkyl-carbonyl, C<sub>3-8</sub> cycloalkyl-carbonyl, C<sub>1-6</sub> alkoxy-carbonyl, C<sub>6-14</sub> aryl-carbonyl, C<sub>7-16</sub> aralkyl-carbonyl, C<sub>6-14</sub> aryloxy-carbonyl, C<sub>7-16</sub> aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono-C<sub>1-6</sub> alkyl-carbamoyl, di-C<sub>1-6</sub> alkyl-carbamoyl, mono-C<sub>6-14</sub> aryl-15 carbamoyl, di-C<sub>6-14</sub> aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, C<sub>1-6</sub> alkyl-thiocarbonyl, C<sub>3-8</sub> cycloalkyl-thiocarbonyl, C<sub>1-6</sub> alkoxy-thiocarbonyl, C<sub>6-14</sub> aryl-thiocarbonyl, C<sub>7-16</sub> aralkyl-thiocarbonyl,
- 20  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-thiocarbamoyl, mono- $C_{6-14}$  aryl-
- thiocarbamoyl,  $\operatorname{di-C_{6-14}}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl,  $\operatorname{di-C_{1-6}}$  alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$
- arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl, sulfino, sulfo,  $C_{1-6}$  alkoxysulfinyl,  $C_{6-14}$  aryloxysulfinyl,  $C_{1-6}$  alkoxysulfonyl and  $C_{6-14}$  aryloxysulfonyl, which may have 1 to 5 substituents selected from Substituent group A described above,
- (iv) a 5- to 14-membered heterocycle containing 1 to 4 hetero 35 atoms selected from a nitrogen atom, a sulfur atom and an oxygen

atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A described above,

- (v) a halogen atom,
- (vi) a group represented by the formula  $-\mathrm{OR}^{16}$  ( $\mathrm{R}^{16}$  represents 5 (i') a hydrogen atom, (ii') a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, (iii') an acyl group selected from formyl, carbamoyl,  $C_{1-6}$  alkyl-10 carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,  $C_{6-14}$  arylcarbonyl, C<sub>7-16</sub> aralkyl-carbonyl, C<sub>6-14</sub> aryloxy-carbonyl, C<sub>7-16</sub> aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono-15  $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl, mono- $C_{6-14}$  arylcarbamoyl,  $di-C_{6-14}$  aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl-thiocarbonyl,  $C_{1-6}$  alkoxy-20 thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$  aralkyl-thiocarbonyl,  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, thiocarbamoyl, mono-C1-6 alkyl-25 thiocarbamoyl, di-C<sub>1-6</sub> alkyl-thiocarbamoyl, mono-C<sub>6-14</sub> arylthiocarbamoyl,  $di-C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$ 30 alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$ arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl,  $C_{1-6}$ alkoxysulfinyl,  $C_{6-14}$  aryloxysulfinyl,  $C_{1-6}$  alkoxysulfonyl and  $C_{6-14}$ aryloxysulfonyl, which may have 1 to 5 substituents selected from Substituent group A described above, or (iv') a 5- to 14-membered

35 heterocycle containing 1 to 4 hetero atoms selected from a

nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A described above),

(vii) a group represented by the formula -SR<sup>17</sup> (R<sup>17</sup> represents 5 (i') a hydrogen atom, (ii') a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, (iii') an acyl group selected from formyl, carbamoyl, C1-6 alkyl-10 carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$  alkoxy-carbonyl,  $C_{6-14}$  arylcarbonyl,  $C_{7-16}$  aralkyl-carbonyl,  $C_{6-14}$  aryloxy-carbonyl,  $C_{7-16}$ aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, mono-15 C<sub>1-6</sub> alkyl-carbamoyl, di-C<sub>1-6</sub> alkyl-carbamoyl, mono-C<sub>6-14</sub> arylcarbamoyl, di-C<sub>6-14</sub> aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkyl-thiocarbonyl,  $C_{1-6}$  alkoxy-20 thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$  aralkyl-thiocarbonyl,  $C_{6-14}$  aryloxy-thiocarbonyl,  $C_{7-16}$  aralkyloxy-thiocarbonyl, 5- or 6membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, thiocarbamoyl, mono- $C_{1-6}$  alkyl-25 thiocarbamoyl, di-C<sub>1-6</sub> alkyl-thiocarbamoyl, mono-C<sub>6-14</sub> arylthiocarbamoyl,  $di-C_{6-14}$  aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono- $C_{1-6}$  alkylsulfamoyl, di- $C_{1-6}$ 30 alkylsulfamoyl,  $C_{6-14}$  arylsulfamoyl,  $C_{1-6}$  alkylsulfonyl,  $C_{6-14}$ arylsulfonyl,  $C_{1-6}$  alkylsulfinyl,  $C_{6-14}$  arylsulfinyl,  $C_{1-6}$ alkoxysulfinyl,  $C_{6-14}$  aryloxysulfinyl,  $C_{1-6}$  alkoxysulfonyl and  $C_{6-14}$ aryloxysulfonyl, which may have 1 to 5 substituents selected from Substituent group A described above or (iv') a 5- to 14-membered

35 heterocycle containing 1 to 4 hetero atoms selected from a

nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A described above),

(viii) a group represented by the formula  $-S(O)_rR^{11}$  ( $R^{11}$  represents (i') a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above or (ii') a 5- to 14-membered heterocycle containing 1 to 4 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A described above and r is 1 or 2) or

(ix) a group represented by the formula -NR<sup>18</sup>R<sup>19</sup> (R<sup>18</sup> and R<sup>19</sup> 15 each represent (i') a hydrogen atom, (ii') a C<sub>1-6</sub> alkyl group, C<sub>2-6</sub> alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$ cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, (iii') an acyl group selected from formyl, 20 carbamoyl,  $C_{1-6}$  alkyl-carbonyl,  $C_{3-8}$  cycloalkyl-carbonyl,  $C_{1-6}$ alkoxy-carbonyl, C<sub>6-14</sub> aryl-carbonyl, C<sub>7-16</sub> aralkyl-carbonyl, C<sub>6-14</sub> aryloxy-carbonyl,  $C_{7-16}$  aralkyloxy-carbonyl, 5- or 6-membered heterocyclic carbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to 25 carbon atoms, mono-C<sub>1-6</sub> alkyl-carbamoyl, di-C<sub>1-6</sub> alkyl-carbamoyl, mono-C<sub>6-14</sub> aryl-carbamoyl, di-C<sub>6-14</sub> aryl-carbamoyl, 5- or 6-membered heterocyclic carbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms,  $C_{1-6}$  alkyl-thiocarbonyl,  $C_{3-8}$  cycloalkylthiocarbonyl,  $C_{1-6}$  alkoxy-thiocarbonyl,  $C_{6-14}$  aryl-thiocarbonyl,  $C_{7-16}$ aralkyl-thiocarbonyl, C<sub>6-14</sub> aryloxy-thiocarbonyl, C<sub>7-16</sub> aralkyloxythiocarbonyl, 5- or 6-membered heterocyclic thiocarbonyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, 35 thiocarbamoyl, mono-C<sub>1-6</sub> alkyl-thiocarbamoyl, di-C<sub>1-6</sub> alkylthiocarbamoyl, mono-C<sub>6-14</sub> aryl-thiocarbamoyl, di-C<sub>6-14</sub> aryl-thiocarbamoyl, 5- or 6-membered heterocyclic thiocarbamoyl containing 1 to 3 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, sulfamoyl, mono-C<sub>1-6</sub> alkylsulfamoyl, di-C<sub>1-6</sub> alkylsulfamoyl, C<sub>6-14</sub> arylsulfamoyl, C<sub>1-6</sub> alkylsulfonyl, C<sub>6-14</sub> arylsulfonyl, C<sub>1-6</sub> alkylsulfinyl, C<sub>1-6</sub> alkoxysulfinyl, C<sub>6-14</sub> aryloxysulfinyl, C<sub>6-14</sub> aryloxysulfinyl, C<sub>1-6</sub> alkoxysulfonyl and C<sub>6-14</sub> aryloxysulfonyl, which may have 1 to 5 substituents selected from Substituent group A described above or (iv') a 5- to 14-membered heterocycle containing 1 to 4 hetero atoms selected from a nitrogen atom, a sulfur atom and an oxygen atom in addition to carbon atoms, which may have 1 to 5 substituents selected from Substituent group A described above),

R<sup>7</sup> and R<sup>8</sup> are each (i) a hydrogen atom or (ii) a C<sub>1-6</sub> alkyl group, C<sub>2-6</sub> alkenyl group, C<sub>2-6</sub> alkynyl group, C<sub>3-8</sub> cycloalkyl group, C<sub>3-8</sub> cycloalkenyl group, C<sub>6-14</sub> aryl group or C<sub>7-16</sub> aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, or R<sup>7</sup> and R<sup>8</sup> may be taken together with the adjacent carbon atom to form C<sub>3-8</sub> cycloalkane or a 3- to 8-membered heterocycle, which may have respectively 1 to 3 substituents selected from C<sub>1-6</sub> alkyl, C<sub>6-14</sub> aryl, C<sub>7-16</sub> aralkyl, amino, mono-C<sub>1-6</sub> alkylamino, mono-C<sub>6-14</sub> arylamino, di-C<sub>1-6</sub> alkylamino, di-C<sub>6-14</sub> arylamino and a 4- to 10-membered aromatic heterocyclic group;

 $R^9$  and  $R^{10}$  are each (i) a hydrogen atom or (ii) a  $C_{1-6}$  alkyl group,  $C_{2-6}$  alkenyl group,  $C_{2-6}$  alkynyl group,  $C_{3-8}$  cycloalkyl group,  $C_{3-8}$  cycloalkenyl group,  $C_{6-14}$  aryl group or  $C_{7-16}$  aralkyl group, each of which may have 1 to 5 substituents selected from Substituent group A described above, and

Y is a methylene group which may have 1 or 2 substituents selected from Substituent group A described above.

3. The compound according to claim 1, wherein A is (1) a bond, (2) a group represented by the formula  $-CR^a=CR^b-(R^a \text{ and } R^b)$ 

each represent a hydrogen atom or a  $C_{1-6}$  alkyl group), (3) a group represented by the formula  $-(CONH)_p-(C(R^c)(R^d))_q-(R^c)$  and  $R^d$  each represent a hydrogen atom or a  $C_{1-6}$  alkyl group, p represents 0 or 1 and q represent s 1 or 2), (4) a group represented by the formula  $-CH_2OCH_2-$  or (5) a group represented by the formula  $-OCH_2-$ ,  $R^1$  is (1) a cyano group, (2) a carboxyl group, (3) a  $C_{1-6}$  alkoxycarbonyl group, (4) a carbamoyl group or (5) an N-mono- $C_{1-6}$ 

alkoxycarbonyl group, (4) a carbamoyl group or (5) an N-mono- $C_{1-6}$  alkylcarbamoyl group,

R<sup>2</sup> is (1) a hydrogen atom, (2) a hydroxy group, (3) a  $C_{1-6}$ alkoxy group, (4) a  $C_{7-16}$  aralkyloxy group, (5) an amino group, (6) a mono- $C_{1-6}$  alkylamino group which may have one substituent selected from carboxyl, carbamoyl, quinolyl, phenoxy and pyridyl,

(7) a mono-C<sub>7-16</sub> aralkylamino group which may have one substituent

selected from a halogen atom, cyano,  $C_{1-6}$  alkoxy, carboxyl and  $C_{1-6}$  alkoxycarbonyl, (8) a mono- $C_{6-14}$  arylamino group, (9) a mono- $C_{1-6}$  alkylcarbonylamino group which may have 1 to 3 substituents selected from a halogen atom, thienyl and  $C_{1-6}$  alkoxycarbonyl- $C_{1-6}$  alkylthio, (10) a mono- $C_{1-6}$  alkylsulfonylamino group, (11) a mono- $C_{6-14}$  arylcarbonylamino group which may have one substituent

selected from  $C_{1-6}$  alkoxy and  $C_{1-6}$  alkylcarbonylamino, (12) a quinolylcarbonylamino group, (13) a pyridylcarbonylamino group which may have 1 or 2 halogen atoms, (14) an indolylcarbonylamino group, (15) a  $N-C_{1-6}$  alkyl- $N-C_{1-6}$  alkylcarbonylamino group which may have 1 to 4 substituents selected from a halogen atom,  $C_{1-6}$ 

alkylamino group which may have 1 to 3 halogens, (17) a N- $C_{1-6}$  alkyl-N-pyridylcarbonylamino group, (18) a  $C_{1-6}$  alkylideneamino group which may have one di- $C_{1-6}$  alkylamino, (19) a mono- $C_{1-6}$  alkylureido group which may have one  $C_{1-6}$  alkylamino, (20) a

di- $C_{1-6}$  alkylureido, (21) a mono- $C_{6-14}$  arylureido group, (22) a 1-imidazolidinyl group which may have 1 to 3 substituents selected from  $C_{1-6}$  alkyl and oxo, (23) a  $C_{1-6}$  alkyl group, (24) a  $C_{1-6}$  alkoxycarbonyl group, (25) a nitro group or (26) a 1-pyrrolidinyl group, or

35  $\ensuremath{\text{R}^2}$  and A or  $\ensuremath{\text{R}^1}$  may be taken together with the adjacent carbon atom

to form a nitrogen-containing 5- to 7-membered ring which may have 1 to 3 substituents selected from (1) a hydroxy group, (2)  $C_{1-6}$  alkyl which may have one  $C_{1-6}$  alkoxy-carbonyl, (3)  $C_{7-16}$  aralkyl, (4)  $C_{6-14}$  aryl and (5) oxo,

R<sup>3</sup> and R<sup>4</sup> are each a C<sub>1-6</sub> alkyl group,
R<sup>5</sup> is a hydrogen atom,
R<sup>6</sup> is a C<sub>1-6</sub> alkoxy group,
R<sup>7</sup> and R<sup>8</sup> are each a C<sub>1-6</sub> alkyl group,
R<sup>9</sup> and R<sup>10</sup> are each a hydrogen atom,
Y is a methylene group and
n is 0.

## 4. A compound represented by the formula

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wherein A is (1) a bond, (2) a group represented by the formula -CH=CH-, (3) a group represented by the formula -CONH-  $C(R^c)(R^d)$  - ( $R^c$  and  $R^d$  are each a hydrogen atom or a  $C_{1-6}$  alkyl group), or (4) a group represented by the formula -OCH<sub>2</sub>-,

 $R^1$  is (1) a cyano group, (2) a carboxyl group, (3) a  $C_{1-6}$  20 alkoxycarbonyl group, (4) a carbamoyl group or (5) an N-mono- $C_{1-6}$  alkylcarbamoyl group,

R<sup>2</sup> is (1) a hydroxy group, (2) a C<sub>1-6</sub> alkoxy group, (3) a C<sub>7-16</sub> aralkyloxy group, (4) an amino group, (5) a mono-C<sub>1-6</sub> alkylamino group which may have one substituent selected from carboxyl,

25 carbamoyl, quinolyl, phenoxy and pyridyl, (6) a mono-C<sub>7-16</sub> aralkylamino group which may have one substituent selected from a halogen atom, cyano, C<sub>1-6</sub> alkoxy, carboxyl and C<sub>1-6</sub> alkoxycarbonyl,

(7) a mono- $C_{6-14}$  arylamino group, (8) a mono- $C_{1-6}$  alkylcarbonylamino group which may have 1 to 3 substituents selected from a halogen atom, thienyl and  $C_{1-6}$  alkoxycarbonyl- $C_{1-6}$  alkylthio, (9) a mono- $C_{1-6}$ alkylsulfonylamino group, (10) a mono- $C_{6-14}$  arylcarbonylamino group 5 which may have one substituent selected from  $C_{1-6}$  alkoxy and  $C_{1-6}$ alkylcarbonylamino, (11) a quinolylcarbonylamino group, (12) a pyridylcarbonylamino group which may have 1 or 2 halogen atoms, (13) an indolylcarbonylamino group, (14) a  $N-C_{1-6}$  alkyl $-N-C_{1-6}$ alkylcarbonylamino group which may have 1 to 4 substituents 10 selected from a halogen atom,  $C_{1-6}$  alkoxycarbonyl and quinolyl, (15) a  $N-C_{1-6}$  alkylcarbonyl- $N-C_{7-16}$  aralkylamino group which may have 1 to 3 halogens, (16) a N-C<sub>1-6</sub> alkyl-N-pyridylcarbonylamino group, (17) a  $C_{1-6}$  alkylideneamino group which may have one di- $C_{1-6}$ alkylamino, (18) a mono-C<sub>1-6</sub> alkylureido group which may have one 15  $C_{1-6}$  alkoxycarbonyl, (19) a di- $C_{1-6}$  alkylureido group, (20) a mono- $C_{6-14}$  arylureido group, (21) a 1-imidazolidinyl group which may have 1 to 3 substituents selected from  $C_{1-6}$  alkyl and oxo, (22) a  $C_{1-6}$  alkyl group, (23) a  $C_{1-6}$  alkoxycarbonyl group, (24) a nitro group or (25) a 1-pyrrolidinyl group, or R2 and A or R1 may be 20 taken together with the adjacent carbon atom to form a nitrogencontaining 5- to 7-membered ring which may have 1 to 3 substituents selected from (1) a hydroxy group, (2) a  $C_{1-6}$  alkyl group which may have one  $C_{1-6}$  alkoxy-carbonyl, (3) a  $C_{7-16}$  aralkyl group, (4) a  $C_{6-14}$  aryl group and (5) an oxo group,  $R^3$  and  $R^4$  are each a  $C_{1-6}$  alkyl group, 25 R<sup>5</sup> is a hydrogen atom,  $R^6$  is a  $C_{2-6}$  alkoxy group,  $R^7$  and  $R^8$  are each a  $C_{1-6}$  alkyl group, R<sup>9</sup> and R<sup>10</sup> are each a hydrogen atom,

5. A compound represented by the formula

Y is a methylene group, and

n is 0, or a salt thereof.

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wherein A is (1) a group represented by the formula  $-CR^a=CR^b-(R^a \text{ and } R^b \text{ are each a hydrogen atom or a } C_{1-6} \text{ alkyl group})$ , (2) a group represented by the formula  $-(CONH)_p-(C(R^c)(R^d))_q-(R^c \text{ and } R^d \text{ are each a hydrogen atom or a } C_{1-6} \text{ alkyl group}$ , p is 0 or 1 and q is 1 or 2), (3) a group represented by the formula  $-CH_2OCH_2-$  or (4) a group represented by the formula  $-OCH_2-$ ,

 $R^1$  is (1) a carboxyl group, (2) a  $C_{1-6}$  alkoxycarbonyl group,

(3) an N-mono- $C_{1-6}$  alkylcarbamoyl group or (4) a carbamoyl group,  $R^2$  is a hydrogen atom,

 $R^3$  and  $R^4$  are each a  $C_{1-6}$  alkyl group,

R<sup>5</sup> is a hydrogen atom,

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 $R^6$  is a  $C_{2-6}$  alkoxy group,

 $R^7$  and  $R^8$  are each a  $C_{1-6}$  alkyl group,

R9 and R10 are each a hydrogen atom,

Y is a methylene group, and

n is 0, or a salt thereof.

- 6. The compound according to claim 4, wherein A is (1) a 20 bond or (2) a group represented by the formula -CH=CH-.
- 7. The compound according to claim 5, wherein A is (1) a group represented by the formula -CH=CH-, (2) a group represented by the formula -( $C(R^c)(R^d)$ )- ( $R^c$  and  $R^d$  each represent a hydrogen 25 atom or a  $C_{1-6}$  alkyl group) or (3) a group represented by the formula -CH<sub>2</sub>OCH<sub>2</sub>-.

- 8. The compound according to claim 4, wherein R<sup>1</sup> is a carboxyl group or a carbamoyl group.
- 9. The compound according to claim 5, wherein R<sup>1</sup> is a 5 carboxyl group.
- 10. The compound according to claim 4, wherein R<sup>2</sup> is (1) a C<sub>1-6</sub> alkoxy group, (2) a mono-C<sub>1-6</sub> alkylamino group, (3) a mono-C<sub>7-16</sub> aralkylamino group, (4) a quinolylcarbonylamino group or (5) a pyridylcarbonylamino group.
  - 11. The compound according to claim 4 or 5, wherein  $\ensuremath{R^3}$  and  $\ensuremath{R^4}$  are each methyl.
- 15 12. The compound according to claim 4 or 5, wherein  $\mathbb{R}^6$  is ethoxy.

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- 13. The compound according to claim 4 or 5, wherein  $\mathbb{R}^7$  and  $\mathbb{R}^8$  are each methyl.
- 14. The compound according to claim 4, which is 4-(6-ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)-2-[(phenylmethyl)amino]benzoic acid, 4-(6-ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)-2
  25 (ethylamino)benzoic acid, (E)-3-[4-(6-ethoxy-3,4,8,9-tetrahydro-
  - 3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)-2-methoxyphenyl]2-propenoic acid, 4-(6-ethoxy-3,4,8,9-tetrahydro-3,3,8,8tetramethylfuro[2,3-h]isoquinolin-1-yl)-2-[(2quinolinylcarbonyl)amino]benzoic acid, 4-(6-ethoxy-3,4,8,9-
- tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)-2-[(2pyridinylcarbonyl)amino]benzene acetic acid, N-[2-(aminocarbonyl)-
  - 5-(6-ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)phenyl]-2-pyridinecarboxamide or a salt thereof.
    - 15. The compound according to claim 5, which is [[4-(6-

ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)phenyl]methoxy]acetic acid,  $4-(6-\text{ethoxy-3,4,8,9-tetrahydro-3,3,8,8-tetramethylfuro[2,3-h]isoquinolin-1-yl)-<math>\alpha$ , $\alpha$ -dimethylbenzene acetic acid or a salt thereof.

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- 16. The pharmaceutical composition comprising the compound according to claim 1 or a prodrug thereof.
- 17. The pharmaceutical composition according to claim 16, which is a phosphodiesterase IV inhibitor.
- 18. The pharmaceutical composition according to claim 16, which is a prophylactic and/or therapeutic agent against inflammatory diseases, atopic dermatitis, allergic rhinitis,

  15 asthma, chronic obstructive pulmonary diseases, chronic rheumatoid arthritis, autoimmune diseases, depression, Alzheimer's dementia, memory disorders, osteoporosis, diabetes or atherosclerosis.
- 19. A method of inhibiting phosphodiesterase IV, which
  20 comprises administering to a mammal an effective amount of the
  compound according to claim 1 or a prodrug thereof.
- 20. A method of preventing and/or treating inflammatory diseases, atopic dermatitis, allergic rhinitis, asthma, chronic obstructive pulmonary diseases, chronic rheumatoid arthritis, autoimmune diseases, depression, Alzheimer's dementia, memory disorders, osteoporosis, diabetes or atherosclerosis, which comprises administering to a mammal an effective amount of the compound according to claim 1 or a prodrug thereof.

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- 21. Use of the compound according to claim 1 or a prodrug thereof for manufacturing a phosphodiesterase IV inhibitor.
- 22. Use of the compound according to claim 1 or a prodrug
  35 thereof for manufacturing a prophylactic and/or therapeutic agent

against inflammatory diseases, atopic dermatitis, allergic rhinitis, asthma, chronic obstructive pulmonary diseases, chronic rheumatoid arthritis, autoimmune diseases, depression, Alzheimer's dementia, memory disorders, osteoporosis, diabetes or atherosclerosis.